



golatattct	ctgctattgt	tgggtggaatg	agtttggggg	aactcttttc	gaatcttggg	1140
gggttagta	aaggtaaaagc	ggctgggtat	aagttgatgg	agataattaa	ccagagacgg	1200
agataattc	aagacccgtt	ggatggaaaa	tgtttggatc	aagttcatgg	gaacattgag	1260
tttaaagatg	tgaatttttag	ctatccttca	cggcctgatg	ttatgatctt	caggaaacttt	1320
aattttttct	tcctttctgg	gaaaaacttg	ggggttgttg	gtgggagtgg	ctctgggaaag	1380
agtactgttg	tttccctcat	tgagagatct	tatgatccaa	acagcgggca	aattctgttg	1440
gctggtgctg	agataaagac	gcttcagttg	aagttctctg	gtgaacaaat	cgggtctgtg	1500
aattcaagaa	ctgctgctct	tgcactact	atactagaga	acatactcta	tggaaagcct	1560
gctgcaacaa	tggctgaagt	tgaagctgct	gctcccgctg	cgaatgggca	tagtttcaat	1620
acattacttc	ctaaaaggcta	cgacacacag	gttggagaa	gtggtgttca	actctcaggt	1680
ggacagaag	agagaattgc	aattgctagg	ggatgttga	aagacccaaa	gattctgtta	1740
ctagatgaag	ctacaagjcg	ctctgatgct	agctctgaga	gcatgttcca	ggaaagcttta	1800
gacagagtca	tgggtggggag	gaccaactgt	gttcttgctc	actgtctctg	ccacctcaga	1860
aactgtgatt	ctattgcctg	gatacacagaa	ggccaagtctg	ttgaaaacgg	aacacatgaa	1920
gaactcattg	ccaaaatccgg	tgcttaacga	ccctccatca	ggtttcaggga	aatggttggg	1980
actcgagatt	tttcaaaacc	gtcaactcgt	cggactcgtt	caacccgttt	gagccattca	2040
ctgtcaanga	aattcactcag	tttaagatca	ggaagtctga	ggaatctgag	ctattcttca	2100
agcaatggag	ctgatggctg	gatagagatg	atttcaaatg	cagagactga	ccgaaagact	2160
ctgtgctctg	aaaatttact	ctacaggctt	ctcaagctta	attcaacggga	atggccttca	2220
ccaactcatg	gagcagtagg	ctcaattctt	cttgggttca	ttggctctac	atttgctatt	2280
gtgatgagca	acatgatcga	agctttctac	tacacagact	atgattcaat	ggaaaaggaaa	2340
acaaaagagt	atgtcttcat	ccacattggg	gctggtctct	atgctgtggg	tgcttatttg	2400
acccaacatt	actctcttag	cacatggga	gaaaactcca	caaccaaggt	aagaagaatg	2460
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agaactccaa	tjattgttgg	tgaaggagtc	agtaacatta	gaaccgtagc	agcttccaat	2820
gacagagca	agattctctc	cttgttctgt	catgagcttc	gtgtacctca	gaaaagaagc	2880
ccaagcttat	acccaagtca	aacctcgggt	ctccctcttg	gctctccgca	gcttgctctc	2940
tctggtcttg	aggctttaat	ctctcgggtt	ggttgccaat	ttgtgagtta	aggcgctgtca	3000
actcttccca	aagtgatcaa	agtgtcttct	gtttcggctc	ctactgcaaa	ctctgcttgt	3060
gaaactgtca	gtcttgatcc	tgaattatc	cggggagggtg	aagctgttgg	ctcggctctc	3120
tgggtcttgg	acaggccagac	caggattgac	cgggatgatg	ctgatgctga	ccccgtggag	3180
agatccgtg	gagacattga	gtttaggcat	gttgattccg	cttacctctc	aagacccgac	3240
gctatggttc	ctagggaact	caacctcaga	attcgaigtg	gacatagcca	agctatcttg	3300
gtggcgagtg	ggttcaggaa	gagctctgta	attcgcagta	ctagagcgtt	ctacgacctt	3360
ctgcttggaa	agtcattgat	tgatgggaaa	gattctcggc	gcttaacct	gaaatctcta	3420
aggtcaaaa	tgggtcttgg	ctctcaagaa	cttgctcttc	ctgaactaac	gattctgac	3480
actatggct	tgttaaaaga	ctgtgtaact	gattctgaaa	taattgatga	agcttgagct	3540
caaatgctc	ctggctctat	ctgtggttta	cttgaaaggt	caaatctcca	cttggcgaa	3600
caaatgctat	tttctctctg	ctgacaaaa	caaatcttgg	gatacgaag	agctgtgttc	3660
agaaccccta	cagtgttgct	cttagacgaa	gtaactagcc	caatagatgc	agaatcagaa	3720
tctgtgctgc	aagagggtt	agagaggctc	atgagaggtc	ggaccccggt	ggtagtctgt	3780
ccacgcttgt	ccacccaaga	aggtgttgat	tgpatttgtg	tgattcaaga	cgggcggatt	3840
ctggagccaag	gtagccattc	agagctcgtt	agccgacag	agggagctta	ttcaaggctg	3900
ctaatgcttc	caatcatatg	gatttgaagc	ctaatcatag	attaaaaaca	caaatctggt	3960
tgtgttaatt	tttttatat	caaaaattta	atttcaaga	ttttattta	cttcaatttt	4020

Met	Ser	Glu	Thr	Asn	Thr	Thr	Asp	Ala	Lys	Thr	Val	Pro	Ala	Glu	Ala
1				5					10					15	
Glu	Lys	Lys	Lys	Glu	Gln	Ser	Leu	Pro	Phe	Phe	Lys	Leu	Phe	Ser	Phe
			20					25					30		
Ala	Asp	Lys	Phe	Asp	Tyr	Leu	Leu	Met	Phe	Val	Gly	Ser	Leu	Gly	Ala
		35					40					45			
Ile	Val	His	Gly	Ser	Ser	Met	Pro	Val	Phe	Phe	Leu	Phe	Gly	Gln	
	50					55					60				
Met	Val	Asn	Gly	Phe	Gly	Lys	Asn	Gln	Met	Asp	Leu	His	Gln	Met	Val
65					70					75				80	
His	Glu	Val	Ser	Arg	Tyr	Ser	Leu	Tyr	Phe	Val	Tyr	Leu	Gly	Leu	Val
				85					90				95		
Val	Cys	Phe	Ser	Ser	Tyr	Ala	Glu	Ile	Ala	Cys	Trp	Met	Tyr	Ser	Gly
			100					105					110		
Glu	Arg	Gln	Val	Ala	Ala	Leu	Arg	Lys	Lys	Tyr	Leu	Glu	Ala	Val	Leu
			115					120					125		
Lys	Gln	Asp	Val	Gly	Phe	Phe	Asp	Thr	Asp	Ala	Arg	Thr	Gly	Asp	Ile
	130							135				140			
Val	Phe	Ser	Val	Ser	Thr	Asp	Thr	Leu	Leu	Val	Gln	Asp	Ala	Ile	Ser
145					150					155				160	
Glu	Lys	Val	Gly	Asn	Phe	Ile	His	Tyr	Leu	Ser	Thr	Phe	Leu	Ala	Gly
				165					170					175	
Leu	Val	Val	Gly	Phe	Val	Ser	Ala	Trp	Lys	Leu	Ala	Leu	Leu	Ser	Val
			180					185					190		
Ala	Val	Ile	Pro	Gly	Ile	Ala	Phe	Ala	Gly	Gly	Leu	Tyr	Ala	Tyr	Thr
		195						200					205		
Leu	Thr	Gly	Ile	Thr	Ser	Lys	Ser	Arg	Glu	Ser	Tyr	Ala	Asn	Ala	Gly
	210					215						220			
Val	Ile	Ala	Glu	Gln	Ala	Ile	Ala	Gln	Val	Arg	Thr	Val	Tyr	Ser	Tyr
225					230					235					240
Val	Gly	Glu	Ser	Lys	Ala	Leu	Asn	Ala	Tyr	Ser	Asp	Ala	Ile	Gln	Tyr
				245					250					255	
Thr	Leu	Lys	Leu	Gly	Tyr	Lys	Ala	Gly	Met	Ala	Lys	Gly	Leu	Gly	Leu
			260					265					270		
Gly	Cys	Thr	Tyr	Gly	Ile	Ala	Cys	Met	Ser	Trp	Ala	Leu	Val	Phe	Trp
	275					280							285		
Tyr	Ala	Gly	Val	Phe	Ile	Arg	Asn	Gly	Gln	Thr	Asp	Gly	Gly	Lys	Ala
	290					295						300			
Ile	Thr	Ala	Ile	Ile	Ser	Ala	Ile	Val	Gly	Gly	Met	Ser	Leu	Gly	Gln
305														310	
Leu	Ile	Ser	Asn	Leu	Gly	Ala	Ile	Val	Gly	Gly	Lys	Ala	Ala	Gly	Gln
Lys	Leu	Met	Val	Ile	Ile	Asn	Gln	Arg	Pro	Thr	Ile	Ile	Gln	Asp	Pro
			340					345					350		
Leu	Asp	Gly	Lys	Cys	Leu	Asp	Gln	Val	His	Gly	Asn	Ile	Glu	Phe	Lys
	355						360					365			
Asp	Val	Thr	Phe	Ser	Tyr	Pro	Ser	Arg	Pro	Asp	Val	Met	Ile	Phe	Arg
	370					375						380			
Asn	Ile	Asn	Ile	Ile	Ile	Ser	Leu	Gly	Tyr	Leu	Val	Ala	Val	Val	Gly
385															390

450		455		460
Lys Pro Asp Ala Thr Met Val Glu Val Glu Ala Ala Ala Ser Ala Ala				
465		470		475
Asn Ala His Ser Phe Ile Thr Leu Leu Pro Lys Gly Tyr Asp Thr Gln				
	485		490	495
Val Gly Glu Arg Gly Val Gln Leu Ser Gly Gly Gln Lys Gln Arg Ile				
	500		505	510
Ala Ile Ala Arg Ala Met Leu Lys Asp Pro Lys Ile Leu Leu Asp				
	515		520	525
Glu Ala Thr Ser Ala Leu Asp Ala Ser Ser Glu Ser Ile Val Gln Glu				
	530		535	540
Ala Leu Asp Arg Val Met Val Gly Arg Thr Thr Val Val Val Ala His				
545		550		555
Arg Leu Cys Thr Ile Arg Asn Val Asp Ser Ile Ala Val Ile Gln Gln				
	565		570	575
Gly Gln Val Val Glu Thr Gly Thr His Glu Glu Leu Ile Ala Lys Ser				
	580		585	590
Gly Ala Tyr Ala Ser Leu Ile Arg Phe Gln Glu Met Val Gly Thr Arg				
	595		600	605
Asp Phe Ser Asn Pro Ser Thr Arg Arg Thr Arg Ser Thr Arg Leu Ser				
	610		615	620
His Ser Leu Ser Thr Lys Ser Leu Ser Leu Arg Ser Gly Ser Leu Arg				
625		630		635
Asn Leu Ser Tyr Ser Tyr Ser Thr Gly Ala Asp Gly Arg Ile Glu Met				
	645		650	655
Ile Ser Asn Ala Glu Thr Asp Arg Lys Thr Arg Ala Pro Glu Asn Tyr				
	660		665	670
Phe Tyr Arg Leu Leu Lys Leu Asn Ser Pro Glu Trp Pro Tyr Ser Ile				
	675		680	685
Met Gly Ala Val Gly Ser Ile Leu Ser Gly Phe Ile Gly Pro Thr Phe				
	690		695	700
Ala Ile Val Met Ser Asn Met Ile Glu Val Phe Tyr Tyr Thr Asp Tyr				
705		710		715
Asp Ser Met Glu Arg Lys Thr Lys Glu Tyr Val Phe Ile Tyr Ile Gly				
	725		730	735
Ala Gly Leu Tyr Ala Val Gly Ala Tyr Leu Ile Gln His Tyr Phe Phe				
	740		745	750
Ser Ile Met Gly Glu Asn Leu Thr Thr Arg Val Arg Arg Met Met Leu				
	755		760	765
Ser Ala Ile Leu Arg Asn Glu Val Gly Tyr Phe Asp Glu Asp Ala His				
	775		780	785
Asn Ser Ser Leu Ile Ala Ala Asn Leu Ala Thr Arg Ala Ala Arg Val				
	795		800	805
Lys Ser Ala Ile Ala Glu Arg Ile Ser Val Thr Leu Gln Asn Met Thr				
	805		810	815
Ser Leu Leu Thr Ser Phe Ile Val Ala Phe Ile Val Glu Trp Arg Val				
	820		825	830
Ser Leu Leu Thr Ser Phe Ile Val Ala Phe Ile Val Glu Trp Arg Val				
	835		840	845
Ser Leu Leu Thr Ser Phe Ile Val Ala Phe Ile Val Glu Trp Arg Val				
	850		855	860
Ala Ile Thr Leu Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr				

Gln Thr Ser Gly Phe Leu Phe Gly Leu Ser Gln Leu Ala Leu Tyr Gly
 915 920 925
 Ser Glu Ala Leu Ile Leu Trp Tyr Gly Ala His Leu Val Ser Lys Gly
 930 935 940
 Val Ser Thr Phe Ser Lys Val Ile Lys Val Phe Val Val Leu Val Ile
 945 950 955 960
 Thr Ala Asn Ser Val Ala Glu Thr Val Ser Leu Ala Pro Glu Ile Ile
 965 970 975
 Arg Gly Gly Glu Ala Val Gly Ser Val Phe Ser Val Leu Asp Arg Gln
 980 985 990
 Thr Arg Ile Asp Pro Asp Asp Ala Asp Ala Asp Pro Val Glu Thr Ile
 995 1000 1005
 Arg Gly Asp Ile Glu Phe Arg His Val Asp Phe Ala Tyr Pro Ser Arg
 1010 1015 1020
 Pro Asp Val Met Val Phe Arg Asp Phe Asn Leu Arg Ile Arg Ala Gly
 1025 1030 1035 1040
 His Ser Gln Ala Leu Val Gly Ala Ser Gly Ser Gly Lys Ser Ser Val
 1045 1050 1055
 Ile Ala Met Ile Glu Arg Phe Tyr Asp Leu Leu Ala Gly Lys Val Met
 1060 1065 1070
 Ile Asp Gly Lys Asp Ile Arg Arg Leu Asn Leu Lys Ser Leu Arg Leu
 1075 1080 1085
 Lys Ile Gly Leu Val Gln Gln Glu Pro Ala Leu Phe Ala Ala Thr Ile
 1090 1095 1100
 Phe Asp Asn Ile Ala Tyr Gly Lys Asp Gly Ala Thr Glu Ser Glu Val
 1105 1110 1115 1120
 Ile Asp Ala Ala Arg Ala Ala Asn Ala His Gly Phe Ile Ser Gly Leu
 1125 1130 1135
 Pro Glu Gly Tyr Lys Thr Pro Val Gly Glu Arg Gly Val Gln Leu Ser
 1140 1145 1150
 Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Val Leu Lys Asn
 1155 1160 1165
 Pro Thr Val Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp Ala Glu
 1170 1175 1180
 Ser Glu Cys Val Leu Gln Glu Ala Leu Glu Arg Leu Met Arg Gly Arg
 1185 1190 1195 1200
 Thr Thr Val Val Val Ala His Arg Leu Ser Thr Ile Arg Gly Val Asp
 1205 1210 1215
 Tyr Ile Gly Thr Ile Val Asp Gly Arg Ile Val Glu Gln Gly Ser His
 1220 1225 1230
 Ser Ala Leu Glu Ser Ala Ile Ile Gly Ala Tyr Ser Ala Leu Leu Gln
 1235 1240 1245
 Leu Gln Thr His Arg Ile
 1250

42108-3

42111-1280

42112-PPT

1111-Human Arg Leu

Phe	Lys	Leu	Asn	Asn	Lys	Ser	Glu	Lys	Asp	Lys	Lys	Glu	Lys	Lys	Pro
			20					25					30		
Thr	Val	Ser	Val	Phe	Ser	Met	Phe	Arg	Tyr	Ser	Asn	Trp	Leu	Asp	Lys
		35					40					45			
Leu	Tyr	Met	Val	Val	Gly	Thr	Leu	Ala	Ala	Ile	Ile	His	Gly	Ala	Gly
	50					55					60				
Leu	Pro	Leu	Met	Met	Leu	Val	Phe	Gly	Glu	Met	Thr	Asp	Ile	Phe	Ala
65					70					75					80
Asn	Ala	Gly	Asn	Leu	Glu	Asp	Leu	Met	Ser	Asn	Ile	Thr	Asn	Arg	Ser
			85						90					95	
Asp	Ile	Asn	Asp	Thr	Gly	Phe	Phe	Met	Asn	Leu	Glu	Glu	Asp	Met	Thr
		100						105					110		
Arg	Tyr	Ala	Tyr	Tyr	Tyr	Ser	Gly	Ile	Gly	Ala	Gly	Val	Leu	Val	Ala
	115						120						125		
Ala	Tyr	Ile	Gln	Val	Ser	Phe	Trp	Cys	Leu	Ala	Ala	Gly	Arg	Gln	Ile
	130					135					140				
His	Lys	Ile	Arg	Lys	Gln	Phe	Phe	His	Ala	Ile	Met	Arg	Gln	Glu	Ile
145				150						155					160
Gly	Trp	Phe	Asp	Val	His	Asp	Val	Gly	Glu	Leu	Asn	Thr	Arg	Leu	Thr
			165					170						175	
Asp	Asp	Val	Ser	Lys	Ile	Asn	Glu	Val	Ile	Gly	Asp	Lys	Ile	Gly	Met
		180					185						190		
Phe	Phe	Gln	Ser	Met	Ala	Thr	Phe	Phe	Thr	Gly	Phe	Ile	Val	Gly	Phe
	195						200						205		
Thr	Arg	Gly	Trp	Lys	Leu	Thr	Leu	Val	Ile	Leu	Ala	Ile	Ser	Pro	Val
	210					215					220				
Leu	Gly	Leu	Ser	Ala	Ala	Val	Trp	Ala	Lys	Ile	Leu	Ser	Ser	Phe	Thr
225				230						235					240
Asp	Lys	Glu	Leu	Leu	Ala	Tyr	Ala	Lys	Ala	Gly	Ala	Val	Ala	Glu	Glu
			245					250						255	
Val	Leu	Ala	Ala	Ile	Arg	Thr	Val	Ile	Ala	Phe	Gly	Gly	Gln	Lys	Lys
		260					265						270		
Glu	Leu	Glu	Arg	Tyr	Asn	Lys	Asn	Leu	Glu	Glu	Ala	Lys	Arg	Ile	Gly
	275					280					285				
Ile	Lys	Lys	Ala	Ile	Thr	Ala	Asn	Ile	Ser	Ile	Gly	Ala	Ala	Phe	Leu
	290					295					300				
Leu	Ile	Tyr	Ala	Ser	Tyr	Ala	Leu	Ala	Phe	Trp	Tyr	Gly	Thr	Thr	Leu
305				310						315					320
Val	Leu	Ser	Gly	Glu	Tyr	Ser	Ile	Gly	Gln	Val	Leu	Thr	Val	Phe	Phe
			325					330						335	
Phe	Val	Leu	Ile	Gly	Ala	Phe	Val	Val	Gly	Ala	Ala	Ser	Ile	Val	Ile
	340						345						350		
Val	Ala	Phe	Ala	Asn	Ala	Asn	Gly	Ala	Ala	Tyr	Ala	Ile	Ile	Lys	Ile
	355						360					365			
Ile	Asp	Asn	Lys	Pro	Ser	Ile	Asp	Ser	Tyr	Ser	Lys	Ser	Gly	His	Lys
	370					375					380				
Pro	Asp	Asn	Ile	Lys	Gly	Asn	Leu	Glu	Phe	Arg	Asn	Val	His	Phe	Ser
	385				390					395					400
Val	Leu	Val	Arg	Lys	Ala	Val	Lys	Ile	Leu	Lys	Arg	Leu	Asn	Leu	Lys
		405						410						415	

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465					470					475					480
Ala	Thr	Thr	Ile	Ala	Glu	Asn	Ile	Arg	Tyr	Gly	Arg	Glu	Asn	Val	Thr
				485					490					495	
Met	Asp	Glu	Ile	Glu	Lys	Ala	Val	Lys	Glu	Ala	Asn	Ala	Tyr	Asp	Phe
				500				505					510		
Ile	Met	Lys	Leu	Pro	His	Lys	Phe	Asp	Thr	Leu	Val	Gly	Glu	Arg	Gly
				515				520				525			
Ala	Gln	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ala	Ile	Ala	Arg	Ala
				530			535				540				
Leu	Val	Arg	Asn	Pro	Lys	Ile	Leu	Leu	Leu	Asp	Glu	Ala	Thr	Ser	Ala
545					550					555					560
Leu	Asp	Thr	Glu	Ser	Glu	Ala	Val	Val	Gln	Val	Ala	Leu	Asp	Lys	Ala
				565					570					575	
Arg	Lys	Gly	Arg	Thr	Thr	Ile	Val	Ile	Ala	His	Arg	Leu	Ser	Thr	Val
				580				585					590		
Arg	Asn	Ala	Asp	Val	Ile	Ala	Gly	Phe	Asp	Asp	Gly	Val	Ile	Val	Glu
				595			600					605			
Lys	Gly	Asn	His	Asp	Glu	Leu	Met	Lys	Glu	Lys	Gly	Ile	Tyr	Phe	Lys
						615					620				
Leu	Val	Thr	Met	Gln	Thr	Ala	Gly	Asn	Glu	Val	Glu	Leu	Glu	Asn	Ala
625					630					635					640
Ala	Asp	Glu	Ser	Lys	Ser	Glu	Ile	Asp	Ala	Leu	Glu	Met	Ser	Ser	Asn
				645					650					655	
Asp	Ser	Arg	Ser	Ser	Leu	Ile	Arg	Lys	Arg	Ser	Thr	Arg	Arg	Ser	Val
				660				665					670		
Arg	Gly	Ser	Gln	Ala	Gln	Asp	Arg	Lys	Leu	Ser	Thr	Lys	Glu	Ala	Leu
				675			680					685			
Asp	Glu	Ser	Ile	Pro	Pro	Val	Ser	Phe	Trp	Arg	Ile	Met	Lys	Leu	Asn
				690			695				700				
Leu	Thr	Glu	Trp	Pro	Tyr	Phe	Val	Val	Gly	Val	Phe	Cys	Ala	Ile	Ile
705					710					715					720
Asn	Gly	Gly	Leu	Gln	Pro	Ala	Phe	Ala	Ile	Ile	Phe	Ser	Lys	Ile	Ile
				725					730					735	
Gly	Val	Phe	Thr	Arg	Ile	Asp	Asp	Pro	Glu	Thr	Lys	Arg	Gln	Asn	Ser
				740				745					750		
Asn	Leu	Phe	Ser	Leu	Leu	Phe	Leu	Ala	Leu	Gly	Ile	Ile	Ser	Phe	Ile
				755				760				765			
Thr	Phe	Phe	Leu	Gln	Gly	Phe	Thr	Phe	Gly	Lys	Ala	Gly	Glu	Ile	Leu
						775					780				
Leu	Lys	Arg	Leu	Arg	Tyr	Met	Val	Ile	Arg	Leu	Met	Val	Arg	His	Arg
785					790					795					800
Val	Ser	Trp	Ile	Asp	Arg	Ile	Lys	Asn	Ile	Thr	Gly	Ala	Ser	Thr	Thr
				805					810					815	
Arg	Leu	Ala	Asn	Asp											

Arg Asn Ser Leu Arg Lys Ala His Ile Phe Gly Ile Thr Phe Ser Phe
 930 935 940
 Thr Gln Ala Met Met Tyr Phe Ser Tyr Ala Gly Cys Phe Arg Phe Gly
 945 950 955 960
 Ala Tyr Leu Val Ala His Lys Leu Met Ser Phe Glu Asp Val Leu Leu
 965 970 975
 Val Phe Ser Ala Val Val Phe Gly Ala Met Ala Val Gly Gln Val Ser
 980 985 990
 Ser Phe Ala Pro Asp Tyr Ala Lys Ala Lys Ile Ser Ala Ala His Ile
 995 1000 1005
 Ile Met Ile Ile Glu Lys Thr Pro Leu Ile Asp Ser Tyr Ser Thr Glu
 1010 1015 1020
 Gly Leu Met Pro Asn Thr Leu Glu Gly Asn Val Thr Phe Gly Glu Val
 1025 1030 1035 1040
 Val Phe Asn Tyr Pro Thr Arg Pro Asp Ile Pro Val Leu Gln Gly Leu
 1045 1050 1055
 Ser Leu Glu Val Lys Lys Gly Gln Thr Leu Ala Leu Val Gly Ser Ser
 1060 1065 1070
 Gly Cys Gly Lys Ser Thr Val Val Gln Leu Leu Glu Arg Phe Tyr Asp
 1075 1080 1085
 Pro Leu Ala Gly Lys Val Leu Leu Asp Gly Lys Glu Ile Lys Arg Leu
 1090 1095 1100
 Asn Val Gln Trp Leu Arg Ala His Leu Gly Ile Val Ser Gln Glu Pro
 1105 1110 1115 1120
 Ile Leu Phe Asp Cys Ser Ile Ala Glu Asn Ile Ala Tyr Gly Asp Asn
 1125 1130 1135
 Ser Arg Val Val Ser Gln Glu Glu Ile Val Arg Ala Ala Lys Glu Ala
 1140 1145 1150
 Asn Ile His Ala Phe Ile Glu Ser Leu Pro Asn Lys Tyr Ser Thr Lys
 1155 1160 1165
 Val Gly Asp Lys Gly Thr Gln Leu Ser Gly Gly Gln Lys Gln Arg Ile
 1170 1175 1180
 Ala Ile Ala Arg Ala Leu Val Arg Gln Pro His Ile Leu Leu Leu Asp
 1185 1190 1195 1200
 Glu Ala Thr Ser Ala Leu Asp Thr Glu Ser Glu Lys Val Val Gln Glu
 1205 1210 1215
 Ala Leu Asp Lys Ala Arg Glu Gly Arg Thr Cys Ile Val Ile Ala His
 1220 1225 1230
 Ala Leu Ser Thr Ile Gln Asn Ala Arg Leu Ile Val Val Phe Gln Asn
 1235 1240 1245
 Gly Arg Val Lys Ala His Gly Thr His Gln Gln Leu Leu Ala Gln Lys
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 1265 1270 1275 1280

1210-4

1211-1175

1212-187

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Thr Gly Ile Gly Ala Gly Val Leu Ile Val Ala Tyr Ile Gln Val Ser
 20 25 30
 Leu Trp Cys Leu Ala Ala Gly Arg Gln Ile His Lys Ile Arg Gln Lys
 35 40 45
 Phe Phe His Ala Ile Met Asn Gln Glu Ile Gly Trp Phe Asp Val His
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 Asp Val Gly Glu Leu Asn Thr Arg Leu Thr Asp Asp Val Ser Lys Ile
 65 70 75 80
 Asn Asp Gly Ile Gly Asp Lys Ile Gly Met Phe Phe Gln Ser Ile Thr
 85 90 95
 Thr Phe Leu Ala Gly Phe Ile Ile Gly Phe Ile Ser Gly Trp Lys Leu
 100 105 110
 Thr Leu Val Ile Leu Ala Val Ser Pro Leu Ile Gly Leu Ser Ser Ala
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 Leu Trp Ala Lys Val Leu Thr Ser Phe Thr Asn Lys Glu Leu Gln Ala
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 Lys Asn Leu Glu Glu Ala Lys Asn Val Gly Ile Lys Lys Ala Ile Thr
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 Ser Ile Gly Glu Val Leu Thr Val Phe Phe Ser Ile Leu Leu Gly Thr
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 Phe Ser Ile Gly His Leu Ala Pro Asn Ile Glu Ala Phe Ala Asn Ala
 245 250 255
 Arg Gly Ala Ala Phe Glu Ile Phe Lys Ile Ile Asp Asn Glu Pro Ser
 260 265 270
 Ile Asp Ser Phe Ser Thr Lys Gly Tyr Lys Pro Asp Ser Ile Met Gly
 275 280 285
 Asn Leu Glu Phe Lys Asn Val His Phe Asn Tyr Pro Ser Arg Ser Glu
 290 295 300
 Val Gln Ile Leu Lys Gly Leu Asn Leu Lys Val Lys Ser Gly Gln Thr
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 Val Ala Leu Val Gly Asn Ser Gly Cys Gly Lys Ser Thr Thr Val Gln
 325 330 335
 Leu Met Ala Arg Leu Tyr Asp Ser Leu Ala Gly Val Val Ser Ile Asp
 340 345 350
 Gly Gln Asp Ile Arg Thr Ile Asn Val Arg Tyr Leu Arg Glu Ile Ile
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 Gly Val Val Ser Gln Glu Pro Val Leu Phe Ala Thr Thr Ile Ala Glu
 370 375 380
 Asn Ile Arg Tyr Gly Arg Glu Asp Val Thr Met Asp Glu Ile Glu Lys
 385 390 395 400
 Ala Val Lys Ala Ala Asn Ala Tyr Arg Leu Ile Met Lys Leu Ile His
 405 410 415

465	Ile	Val	Ile	Ala	His	Arg	Leu	Ser	Thr	Val	Arg	Asn	Ala	Asp	Val	Ile	480
					485					490						495	
Ala	Gly	Phe	Asp	Gly	Gly	Val	Ile	Val	Glu	Gln	Gly	Asn	His	Asp	Glu		
			500					505					510				
Leu	Met	Arg	Glu	Lys	Gly	Ile	Tyr	Phe	Lys	Leu	Val	Met	Thr	Gln	Thr		
		515					520					525					
Arg	Gly	Asn	Glu	Ile	Glu	Pro	Gly	Asn	Asn	Ala	Tyr	Gly	Ser	Gln	Ser		
	530					535					540						
Asp	Thr	Asp	Ala	Ser	Glu	Leu	Thr	Ser	Glu	Glu	Ser	Lys	Ser	Pro	Leu		
545					550					555					560		
Ile	Arg	Arg	Ser	Ile	Tyr	Arg	Ser	Val	His	Arg	Lys	Gln	Asp	Gln	Glu		
				565					570						575		
Arg	Arg	Leu	Ser	Met	Lys	Glu	Ala	Val	Asp	Glu	Asp	Val	Pro	Leu	Val		
			580					585					590				
Ser	Phe	Trp	Arg	Ile	Leu	Asn	Leu	Asn	Leu	Ser	Glu	Trp	Pro	Tyr	Leu		
	595					600						605					
Leu	Val	Gly	Val	Leu	Cys	Ala	Val	Ile	Asn	Gly	Cys	Ile	Gln	Pro	Val		
	610					615					620						
Phe	Ala	Ile	Val	Phe	Ser	Arg	Ile	Val	Gly	Val	Phe	Ser	Arg	Asp	Asp		
625					630					635					640		
Asp	His	Glu	Thr	Lys	Arg	Gln	Asn	Cys	Asn	Leu	Phe	Ser	Leu	Phe	Phe		
				645					650					655			
Leu	Val	Met	Gly	Leu	Ile	Ser	Phe	Val	Thr	Tyr	Phe	Phe	Gln	Gly	Phe		
			660					665					670				
Thr	Phe	Gly	Lys	Ala	Gly	Glu	Ile	Leu	Thr	Lys	Arg	Val	Arg	Tyr	Met		
		675				680						685					
Val	Phe	Lys	Ser	Met	Leu	Arg	Gln	Asp	Ile	Ser	Trp	Phe	Asp	Asp	His		
	690					695					700						
Lys	Asn	Ser	Thr	Gly	Ser	Leu	Thr	Thr	Arg	Leu	Ala	Ser	Asp	Ala	Ser		
705					710					715					720		
Ser	Val	Lys	Gly	Ala	Met	Gly	Ala	Arg	Leu	Ala	Val	Val	Thr	Gln	Asn		
			725					730					735				
Val	Ala	Asn	Leu	Gly	Thr	Gly	Val	Ile	Leu	Ser	Leu	Val	Tyr	Gly	Trp		
		740					745					750					
Gln	Leu	Thr	Leu	Leu	Leu	Val	Val	Ile	Ile	Pro	Leu	Ile	Val	Leu	Gly		
		755				760					765						
Gly	Ile	Ile	Glu	Met	Lys	Leu	Leu	Ser	Gly	Gln	Ala	Leu	Lys	Asp	Lys		
	770					775					780						
Lys	Val	Leu	Arg	Phe	Phe	Gly	Lys	Glu	Ala	Thr	Val	Ala	Ile	Val	Asn		
785					790				795								

Met	Ala	Phe	Lys	Ala	Met	Leu	Arg	Gln	Asp	Met	Ser	Trp	Phe	Asp	Asp
			580					585					590		
His	Lys	Asn	Ser	Thr	Gly	Ala	Leu	Ser	Thr	Arg	Leu	Ala	Thr	Asp	Ala
		595					600					605			
Ala	Gln	Val	Gln	Gly	Ala	Thr	Gly	Thr	Arg	Leu	Ala	Leu	Ile	Ala	Gln
		610					615				620				
Asn	Ile	Ala	Asn	Leu	Gly	Thr	Gly	Ile	Ile	Ile	Ser	Phe	Ile	Tyr	Gly
		625			630				635						640
Trp	Gln	Leu	Thr	Leu	Leu	Leu	Leu	Ala	Val	Val	Pro	Ile	Ile	Ala	Val
			645					650						655	
Ser	Gly	Ile	Val	Glu	Met	Lys	Leu	Leu	Ala	Gly	Asn	Ala	Lys	Arg	Asp
			660					665					670		
Lys	Lys	Glu	Leu	Glu	Ala	Ala	Gly	Lys	Ile	Ala	Thr	Glu	Ala	Ile	Glu
		675					680					685			
Asn	Ile	Arg	Thr	Val	Val	Ser	Leu	Thr	Gln	Glu	Arg	Lys	Phe	Glu	Ser
		690				695					700				
Met	Tyr	Val	Glu	Lys	Leu	Tyr	Gly	Pro	Tyr	Arg	Asn	Ser	Val	Gln	Lys
		705				710				715					720
Ala	His	Ile	Tyr	Gly	Ile	Thr	Phe	Ser	Ile	Ser	Gln	Ala	Phe	Met	Tyr
			725						730					735	
Phe	Ser	Tyr	Ala	Gly	Cys	Phe	Arg	Phe	Gly	Ala	Tyr	Leu	Ile	Val	Asn
			740					745					750		
Gly	His	Met	Arg	Phe	Arg	Asp	Val	Ile	Leu	Val	Phe	Ser	Ala	Ile	Val
		755					760					765			
Phe	Gly	Ala	Val	Ala	Leu	Gly	His	Ala	Ser	Ser	Phe	Ala	Pro	Asp	Tyr
		770				775					780				
Ala	Lys	Ala	Lys	Leu	Ser	Ala	Ala	His	Leu	Phe	Met	Leu	Phe	Glu	Arg
					790				795						800
Gln	Pro	Leu	Ile	Asp	Ser	Tyr	Ser	Glu	Glu	Gly	Leu	Lys	Pro	Asp	Lys
				805					810					815	
Phe	Glu	Gly	Asn	Ile	Thr	Phe	Asn	Glu	Val	Val	Phe	Asn	Tyr	Pro	Thr
			820					825					830		
Arg	Ala	Asn	Val	Pro	Val	Leu	Gln	Gly	Leu	Ser	Leu	Glu	Val	Lys	Lys
		835					840					845			
Gly	Gln	Thr	Leu	Ala	Leu	Val	Gly	Ser	Ser	Gly	Cys	Gly	Lys	Ser	Thr
		850				855					860				
Val	Val	Gln	Leu	Leu	Glu	Arg	Phe	Tyr	Asp	Pro	Leu	Ala	Gly	Thr	Val
					870				875						880
Leu	Leu	Arg	His	Phe	Glu	Ala	Lys	Lys	Leu	Asn	Val	Gln	Trp	Leu	Arg
			885					890						895	
Ala	Gln	Leu	Gly	Ile	Val	Arg	Ala	Ala	Ile	Ile	Leu	Ile	Asp	Tyr	Ser
			900					905					910		
Ile	Ala	Glu	Asn	Ile											

Trp	Lys	Leu	Thr	Leu	Val	Ile	Met	Ala	Ile	Ser	Pro	Ile	Leu	Gly	Leu
1				5					10					15	
Ser	Thr	Ala	Val	Trp	Ala	Lys	Ile	Leu	Ser	Thr	Phe	Ser	Asp	Lys	Glu
			20					25					30		
Leu	Ala	Ala	Tyr	Ala	Lys	Ala	Gly	Ala	Val	Ala	Glu	Glu	Ala	Pro	Gly
		35					40						45		
Ala	Ile	Arg	Thr	Val	Ile	Ala	Phe	Gly	Gly	Gln	Asn	Lys	Glu	Leu	Glu
		50				55					60				
Arg	Tyr	Gln	Lys	His	Leu	Glu	Asn	Ala	Lys	Lys	Ile	Gly	Ile	Lys	Lys
65					70					75					80
Ala	Ile	Ser	Ala	Asn	Ile	Ser	Met	Gly	Ile	Ala	Phe	Leu	Leu	Ile	Tyr
				85					90						95
Ala	Ser	Tyr	Ala	Leu	Ala	Phe	Trp	Tyr	Gly	Ser	Thr	Leu	Val	Ile	Ser
			100					105						110	
Lys	Glu	Tyr	Thr	Ile	Gly	Asn	Ala	Met	Thr	Val	Phe	Phe	Ser	Ile	Leu
			115				120								
Ile	Gly	Ala	Phe	Ser	Val	Gly	Gln	Ala	Ala	Pro	Cys	Ile	Asp	Ala	Phe
			130				135						140		
Ala	Asn	Ala	Arg	Gly	Ala	Ala	Tyr	Val	Ile	Phe	Asp	Ile	Ile	Asp	Asn
145					150					155					160
Asn	Pro	Lys	Ile	Asp	Ser	Phe	Ser	Glu	Arg	Gly	His	Lys	Pro	Asp	Asn
				165					170						175
Leu	Lys	Gly	Asn	Leu	Ala	Phe	Asn	Asp	Val	His	Phe	Ser	Tyr	Pro	Ser
			180					185					190		
Arg	Ala	Asn	Ile	Lys	Ile	Leu	Lys	Gly	Leu	Asn	Leu	Lys	Val	Lys	Ser
			195				200						205		
Gly	Gln	Thr	Val	Ala	Leu	Val	Gly	Asn	Ser	Gly	Cys	Gly	Lys	Ser	Thr
			210				215					220			
Thr	Val	Gln	Leu	Leu	Gln	Arg	Leu	Tyr	Asp	Pro	Thr	Glu	Gly	Lys	Ile
225					230					235					240
Ser	Ile	Asp	Gly	Gln	Asp	Ile	Arg	Asn	Ile	Asn	Val	Arg	Cys	Leu	Arg
				245					250						255
Ala	Ala	Lys	Ser	Thr	Val	Gln	Ala	Trp	Ile	Trp	Leu	Ile	Ser	Thr	Thr

Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Leu Val Arg
 325 330 335
 Asn Pro Lys Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp Thr
 340 345 350
 Glu Ser Glu Ala Glu Val Gln Ala Ala Leu Asp Lys Ala Arg Glu Gly
 355 360 365
 Arg Thr Thr Ile Val Ile Ala His Arg Leu Ser Thr Ile Arg Asn Ala
 370 375 380
 Asp Val Ile Ala Gly Phe Glu Asp Gly Val Ile Val Glu Gln Gly Ser
 385 390 395 400
 His Ser Glu Leu Met Lys Lys Glu Gly Ile Tyr Phe Arg Leu Val Asn
 405 410 415
 Met Gln Thr Ala Gly Ser Gln Ile Leu Ser Glu Glu Phe Glu Ala Arg
 420 425 430
 Ala Leu Val Arg Asn Pro Lys Ile Leu Leu Leu Asp Glu Ala Thr Ser
 435 440 445
 Ala Leu Asp Thr Glu Ser Glu Ala Val Val Gln Val Ala Leu Asp Lys
 450 455 460
 Ala Arg Lys Gly Arg Thr Thr Ile Val Ile Ala His Arg Leu Ser Thr
 465 470 475 480
 Val Arg Asn Ala Asp Val Ile Ala Gly Phe Asp Asp Gly Val Ile Val
 485 490 495
 Glu Lys Gly Asn His Asp Glu Leu Met Lys Glu Lys Gly Ile Tyr Phe
 500 505 510
 Lys Leu Val Thr Met Gln Thr Ala Gly Asn Glu Val Glu Leu Glu Asn
 515 520 525
 Ala Ala Ala Arg Ala Leu Val Arg Asn Pro Lys Ile Leu Leu Leu Asp
 530 535 540
 Glu Ala Thr Ser Ala Leu Asp Thr Glu Ser Glu Ala Val Val Gln Ala
 545 550 555 560
 Ala Leu Asp Lys Ala Arg Glu Gly Arg Thr Thr Ile Val Ile Ala His
 565 570 575
 Arg Leu Ser Thr Val Arg Asn Ala Asp Val Ile Ala Gly Phe Asp Gly
 580 585 590
 Gly Val Ile Val Glu Gln Gly Asn His Asp Glu Leu Met Arg Glu Lys
 595 600 605
 Gly Ile Tyr Phe Lys Leu Val Met Thr Gln Thr Arg Gly Asn Glu Ile
 610 615 620
 Glu Pro Gly Asn Asn Ala Val Gln Leu Ser Asp Glu Lys Ala Ala Gly
 625 630 635 640
 Asp Val Ala Pro Asn Gly Trp Lys Ala Arg Ile Phe Arg Asn Ser Thr
 645 650 655
 Lys Lys Ser Leu Lys Ser Pro His Gln Asn Arg Leu Asp Gln Glu Thr
 660 665 670
 Asn Glu Leu Asp Ala Asn Val Pro Pro Val Ser Phe Leu Lys Val Leu
 675 680 685
 Lys Leu Asn Lys Thr Glu Trp Pro Tyr Phe Val Val Gly Thr Val Cys
 690 695 700
 Ala Ile Ala Asn Gly Ala Ser Ala Leu Ala Ile Ser Ile Ile Leu Ser
 705 710 715 720

770					775					780						
Gln	Asp	Met	Ser	Trp	Phe	Asp	Asp	His	Lys	Asn	Ser	Thr	Gly	Ala	Leu	
785					790					795					800	
Ser	Thr	Arg	Leu	Ala	Thr	Asp	Ala	Ala	Gln	Val	Gln	Gly	Ala	Thr	Gly	
				805					810						815	
Thr	Lys	Leu	Ala	Leu	Ile	Ala	Gln	Asn	Thr	Ala	Asn	Leu	Gly	Thr	Gly	
				820					825						830	
Ile	Ile	Ile	Ser	Phe	Ile	Tyr	Gly	Trp	Gln	Leu	Thr	Leu	Leu	Leu	Leu	
				835					840						845	
Ser	Val	Val	Pro	Phe	Ile	Ala	Val	Ala	Gly	Ile	Val	Glu	Met	Lys	Met	
				850					855						860	
Leu	Ala	Gly	Asn	Ala	Lys	Arg	Asp	Lys	Lys	Glu	Met	Glu	Ala	Ala	Gly	
865					870					875						880
Lys	Ile	Ala	Thr	Glu	Ala	Ile	Glu	Asn	Ile	Arg	Thr	Val	Val	Ser	Leu	
				885					890						895	
Thr	Gln	Glu	Arg	Lys	Phe	Glu	Ser	Met	Tyr	Val	Glu	Lys	Leu	His	Gly	
				900					905						910	
Pro	Tyr	Arg	Asn	Ser	Val	Arg	Lys	Ala	His	Ile	Tyr	Gly	Ile	Thr	Phe	
				915					920						925	
Ser	Ile	Ser	Gln	Ala	Phe	Met	Tyr	Phe	Ser	Tyr	Ala	Gly	Cys	Phe	Arg	
				930					935						940	
Phe	Gly	Ser	Tyr	Leu	Ile	Val	Asn	Gly	His	Met	Arg	Phe	Lys	Asp	Val	
945					950					955						960
Ile	Leu	Val	Phe	Ser	Ala	Ile	Val	Leu	Gly	Ala	Val	Ala	Leu	Gly	His	
				965					970							975
Ala	Ser	Ser	Phe	Ala	Pro	Asp	Tyr	Ala	Lys	Ala	Lys	Leu	Ser	Ala	Ala	
				980					985							990
Tyr	Leu	Phe	Ser	Leu	Phe	Glu	Arg	Gln	Pro	Leu	Ile	Asp	Ser	Tyr	Ser	
				995					1000							1005
Gly	Glu	Gly	Leu	Trp	Pro	Asp	Lys	Phe	Glu	Gly	Ser	Val	Thr	Phe	Asn	
				1010					1015							1020
Glu	Val	Val	Phe	Asn	Tyr	Pro	Thr	Arg	Ala	Asn	Val	Pro	Val	Leu	Gln	
1025					1030					1035						1040
Gly	Leu	Ser	Leu	Glu	Val	Lys	Lys	Gly	Gln	Thr	Leu	Ala	Leu	Val	Gly	
				1045					1050							1055
Ser	Ser	Gly	Cys	Gly	Lys	Ser	Thr	Val	Val	Gln	Leu	Leu	Glu	Arg	Phe	
				1060					1065							1070
Tyr	Asp	Pro	Met	Ala	Gly	Ser	Val	Leu	Leu	Asp	Gly	Gln	Glu	Ala	Lys	
				1075					1080							1085
Lys	Leu	Asp	Thr	Ala	Gly	Leu	Arg	Ala	Val	Leu	Gly	Ile	Val	Pro	Gln	
				1090					1095							1100
Asn	Ile	Ile	Leu	Phe	Asp	Tyr	Thr	Ile	Ala	His	Asn	Ile	Ala	Ile	Gly	
1105					1110					1115						1120
Arg	Asn	Ser	Arg	Val	Val	Pro	His	Asp	Glu	Ile	Val	Arg	Ala	Ala	Lys	
				1125					1130							1135
Glu	Ala	Asn	Ile	His	Pro	Phe	Ile	Glu	Thr	Leu	Pro	Gln	Lys	Tyr	Asn	
				1140					1145							1150
Thr	Asp	Val	Gly	Asp	Lys	Gly	Thr	Gln	Leu	Ser	Gly	Gly	Gln	Lys	Gln	
				1155					1160							1165
Val	Thr	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val

770		775		780
Lys Met Phe Met Thr Gly Phe Ser Gly Asp Leu Glu Ala Ala His Ala				
785		790		800
Lys Gly Thr Gln Leu Ala Gly Glu Ala Ile Ala Asn Val Arg Thr Val				
	805		810	815
Ala Ala Phe Asn Ser Glu Ala Lys Ile Val Arg Leu Tyr Thr Ala Asn				
	820		825	830
Leu Glu Pro Pro Leu Lys Arg Cys Phe Trp Lys Gly Gln Ile Ala Gly				
	835		840	845
Ser Gly Tyr Gly Val Ala Gln Phe Cys Leu Tyr Ala Ser Tyr Ala Leu				
	850		855	860
Gly Leu Trp Tyr Ala Ser Trp Leu Val Lys His Gly Ile Ser Asp Phe				
865		870		875
Ser Lys Thr Ile Arg Val Phe Met Val Leu Met Val Ser Ala Asn Gly				
	885		890	895
Ala Ala Glu Thr Leu Thr Leu Ala Pro Asp Phe Ile Lys Gly Gly Gln				
	900		905	910
Ala Met Arg Ser Val Phe Glu Leu Leu Asp Arg Lys Thr Glu Ile Glu				
	915		920	925
Pro Asp Asp Pro Asp Thr Thr Pro Val Pro Asp Arg Leu Arg Gly Glu				
	930		935	940
Val Glu Leu Lys His Ile Asp Phe Ser Tyr Pro Ser Arg Pro Asp Ile				
945		950		955
Gln Ile Phe Arg Asp Leu Ser Leu Arg Ala Arg Ala Gly Lys Thr Leu				
	965		970	975
Ala Leu Val Gly Pro Ser Gly Cys Gly Lys Ser Ser Val Ile Ser Leu				
	980		985	990
Ile Gln Arg Phe Tyr Glu Pro Ser Ser Gly Arg Val Met Ile Asp Gly				
	995		1000	1005
Lys Asp Ile Arg Lys Tyr Asn Leu Lys Ala Ile Arg Lys His Ile Ala				
	1010		1015	1020
Ile Val Pro Gln Glu Pro Cys Leu Phe Gly Thr Thr Ile Tyr Glu Asn				
1025		1030		1035
Ile Ala Tyr Gly His Glu Cys Ala Thr Glu Ala Glu Ile Ile Gln Ala				
	1045		1050	1055
Ala Thr Leu Ala Ser Ala His Lys Phe Ile Ser Ala Leu Pro Glu Gly				
	1060		1065	1070
Tyr Lys Thr Tyr Val Gly Glu Arg Gly Val Gln Leu Ser Gly Gly Gln				
	1075		1080	1085
Tyr Ser Ala Ile Ala Ile Ala Ala Ala Leu Val Arg Tyr Ala Glu Ile				
	1090		1095	1100
Met Leu Leu Arg Ala Ala Thr Ser Ala Leu Arg Ala Ala Ser Ala Arg				
1105		1110		1115
Ser Val Gln Glu Ala Leu Asp Gln Ala Cys Ser Gly Arg Thr Ser Ile				
	1125		1130	1135
Val Val Ala His Arg Leu Ser Thr Ile Arg Asn Ala His Val Ile Ala				
	1140		1145	1150
Val Ile Asp Asp Gly Lys Val Ala Glu His Gly Ser His Ser His Leu				
	1155		1160	1165
Val Val Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr				

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<212> PRT
<213> Arabidopsis thaliana

<300>
<308> Genbank CAA71277
<309> 1997-05-19

<400> 8

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Leu	Ser	Val	Ala	Ile	Leu	Phe	Ser	Ser	Trp	Leu	Glu	Val	Ala	Cys	Trp
		20						25					30		
Met	His	Thr	Gly	Glu	Arg	Gln	Ala	Ala	Lys	Met	Arg	Arg	Ala	Tyr	Leu
		35					40					45			
Arg	Ser	Met	Leu	Ser	Gln	Asp	Ile	Ser	Leu	Phe	Asp	Thr	Glu	Ala	Ser
	50					55					60				
Thr	Gly	Glu	Val	Ile	Ser	Ala	Ile	Thr	Ser	Asp	Ile	Leu	Val	Val	Gln
65					70					75					80
Asp	Ala	Leu	Ser	Glu	Lys	Val	Gly	Asn	Phe	Leu	His	Tyr	Ile	Ser	Arg
			35						90					95	
Phe	Ile	Ala	Gly	Phe	Ala	Ile	Gly	Phe	Thr	Ser	Val	Trp	Gln	Ile	Ser
		100						105					110		
Leu	Val	Thr	Leu	Ser	Ile	Val	Pro	Leu	Ile	Ala	Leu	Ala	Gly	Gly	Ile
	115						120					125			
Tyr	Ala	Phe	Val	Ala	Ile	Gly	Leu	Ile	Ala	Arg	Val	Arg	Lys	Ser	Tyr
	130					135					140				
Ile	Lys	Ala	Gly	Glu	Ile	Ala	Glu	Glu	Val	Ile	Gly	Asn	Val	Arg	Thr
145					150					155					160
Val	Gln	Ala	Phe	Thr	Gly	Glu	Glu	Arg	Ala	Val	Arg	Leu	Tyr	Arg	Glu
			165					170						175	
Ala	Leu	Glu	Asn	Thr	Tyr	Lys	Tyr	Gly	Arg	Lys	Ala	Gly	Leu	Thr	Lys
			180					185					190		
Gly	Leu	Gly	Leu	Gly	Ser	Met	His	Cys	Val	Leu	Phe	Leu	Ser	Trp	Ala
	195						200					205			
Leu	Leu	Val	Trp	Phe	Thr	Ser	Val	Val	Val	His	Lys	Asp	Ile	Ala	Asp
	210					215						220			
Gly	Gly	Lys	Ser	Phe	Thr	Thr	Met	Leu	Asn	Val	Val	Ile	Ala	Gly	Leu
225					230					235					240
Phe	Leu	Gly	Gln	Ala	Pro	Asn	Ile	Ser	Ala	Phe	Val	Arg	Ala	Lys	
	245							250					255		
Ala	Ala	Ala	Tyr	Pro	Ile	Phe	Lys	Met	Ile	Ala	Asn	Thr	Val	Thr	
	260						265						270		
Lys	Thr	Ser	Ala	Lys	Ser	Gly	Arg	Lys	Leu	Gly	Lys	Val	Asp	Gly	His
	275						280						285		
Ile	Gln	Phe	Lys	Asp	Ala	Thr	Phe	Ser	Tyr	Pro	Ser	Arg	Pro	Asp	Val
	290					295						300			
Val	Ile	Phe	Asp	Arg	Leu	Asn	Leu	Ala	Ile	Pro	Ala	Arg	Lys	Ile	Val
305					310					315					320
Ala	Val	Arg	Ala	Ala	Ala	Thr	Ala	Leu	Leu	Pro	Thr	Val	Ile	Arg	Leu

835	840	845
Met Asp Lys Gly Leu Ala Gly Phe Lys Ser Val Met Lys Thr Phe Met		
850	855	860
Val Leu Ile Val Thr Ala Leu Ala Met Gly Glu Thr Leu Ala Leu Ala		
865	870	875
Pro Asp Leu Leu Lys Gly Asn Gln Met Val Ala Ser Val Phe Glu Ile		880
885	890	895
Leu Asp Arg Lys Thr Gln Ile Val Gly Glu Thr Ser Glu Glu Leu Asn		
900	905	910
Asn Val Glu Gly Thr Ile Glu Leu Lys Gly Val His Phe Ser Tyr Pro		
915	920	925
Ser Arg Pro Asp Val Val Ile Phe Arg Asp Phe Asp Leu Ile Val Arg		
930	935	940
Ala Gly Lys Ser Met Ala Leu Val Gly Gln Ser Gly Ser Gly Lys Ser		
945	950	955
Ser Val Ile Ser Leu Ile Leu Arg Phe Tyr Asp Pro Thr Ala Gly Lys		960
965	970	975
Val Met Ile Glu Gly Lys Asp Ile Lys Lys Leu Asp Leu Lys Ala Leu		
980	985	990
Arg Lys His Ile Gly Leu Val Gln Gln Glu Pro Ala Leu Phe Ala Thr		
995	1000	1005
Thr Ile Tyr Glu Asn Ile Leu Tyr Gly Asn Glu Gly Ala Ser Gln Ser		
1010	1015	1020
Glu Val Val Glu Ser Ala Met Leu Ala Asn Ala His Ser Phe Ile Thr		
1025	1030	1035
Ser Leu Pro Glu Gly Tyr Ser Thr Lys Val Gly Glu Arg Gly Val Gln		1040
1045	1050	1055
Met Ser Gly Gly Gln Arg Gln Arg Ile Ala Ile Ala Arg Ala Ile Leu		
1060	1065	1070
Lys Asn Pro Ala Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp		
1075	1080	1085
Val Glu Ser Glu Arg Val Val Gln Gln Ala Leu Asp Arg Leu Met Ala		
1090	1095	1100
Asn Arg Thr Thr Val Val Val Ala His Arg Leu Ser Thr Ile Lys Asn		
1105	1110	1115
Ala Asp Thr Ile Ser Val Leu His Gly Gly Lys Ile Val Glu Gln Gly		
1125	1130	1135
Ser His Arg Lys Leu Val Leu Asn Lys Ser Gly Pro Tyr Phe Lys Leu		
1140	1145	1150
Val Ser Glu Glu Glu Ala Ile Phe Glu		
1155	1160	

(210) 9

(211) 986

(212) PPT

(213) Artificial Sequence

(220)

(211) synthetic consensus sequence

Thr Asp Phe Ala Ser Lys Leu Glu Glu Glu Met Thr Arg Tyr Ala Tyr
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 Tyr Tyr Ser Gly Leu Gly Ala Gly Val Leu Val Ala Tyr Ile Gln Val
 65 70 75 80
 Ser Trp Leu Ala Ala Gly Arg Gln Ile Arg Lys Ile Arg Lys Phe Phe
 85 90 95
 His Ala Ile Leu Arg Gln Glu Ile Gly Trp Phe Asp Ile Thr Gly Glu
 100 105 110
 Leu Asn Thr Arg Leu Thr Asp Asp Ile Ser Lys Ile Asn Asp Gly Ile
 115 120 125
 Gly Asp Lys Val Gly Met Phe Phe Gln Val Ala Thr Phe Leu Ala Gly
 130 135 140
 Phe Ile Val Gly Phe Ile Gly Trp Lys Leu Thr Leu Val Ile Leu Ala
 145 150 155 160
 Ile Ser Pro Ile Ile Gly Leu Ser Ala Ala Val Trp Ala Lys Ile Leu
 165 170 175
 Ser Phe Ser Lys Glu Leu Ala Tyr Ala Lys Ala Gly Ala Val Ala Glu
 180 185 190
 Glu Leu Gly Ala Ile Arg Thr Val Ile Ala Phe Gly Gly Gln Lys Glu
 195 200 205
 Leu Glu Arg Tyr Gln Lys Leu Glu Ala Lys Lys Ile Gly Ile Lys Lys
 210 215 220
 Ala Ile Ser Ala Ile Ser Met Gly Ala Phe Leu Leu Ile Tyr Ala Ser
 225 230 235 240
 Tyr Ala Leu Ala Phe Trp Tyr Gly Ser Thr Leu Val Ile Ser Glu Tyr
 245 250 255
 Thr Ile Gly Ala Met Thr Val Phe Phe Ser Ile Leu Ile Gly Ala Phe
 260 265 270
 Ser Val Gly Gln Ala Ala Pro Ile Asp Ala Phe Ala Asn Ala Arg Gly
 275 280 285
 Ala Ala Tyr Ile Phe Lys Ile Ile Asp Asn Pro Ser Ile Asp Ser Phe
 290 295 300
 Ser Gly His Lys Pro Asp Ile Lys Gly Asn Leu Glu Phe Lys Asp Val
 305 310 315 320
 His Phe Ser Tyr Pro Ser Arg Glu Val Lys Ile Leu Lys Gly Leu Asn
 325 330 335
 Leu Lys Val Ser Gly Gln Thr Val Ala Leu Val Gly Ser Gly Cys Gly
 340 345 350
 Lys Ser Thr Thr Val Gln Leu Ile Gln Ala Leu Tyr Asp Pro Glu Gly
 355 360 365
 Val Ile Asp Gly Gln Asp Ile Arg Thr Ile Asn Val Arg Tyr Leu Arg
 370 375 380
 Glu Ile Ile Gly Val Val Ser Gln Gln Phe Val Leu Phe Ala Thr Thr
 385 390 395 400
 Ile Ala Glu Asn Ile Tyr Gly Arg Asp Val Thr Met Asp Glu Ile Glu
 405 410 415
 Lys Ala Val Lys Glu Ala Asn Ala Tyr Glu Phe Ile Met Lys Leu Pro
 420 425 430
 Ile Asp Thr Leu Val Gly Gln Arg Gly Ala His Leu Phe Gly Gly Gln
 435 440 445

Ala His Arg Leu Ser Thr Thr Arg Arg Ala Arg Thr Arg Ala Thr Thr

	500		505		510
Glu Asp Gly Val Ile Val Glu Gly Ser His Asp Glu Leu Met Lys Lys					
515		520		525	
Gly Val Tyr Phe Lys Leu Val Met Gln Thr Gly Ile Asn Ser Glu Ala					
530		535		540	
Met Lys Ser Leu Arg Ser Ser Gln Asp Arg Asp Asp Leu Glu Val Pro					
545		550		555	560
Val Ser Phe Trp Arg Val Leu Lys Leu Asn Thr Glu Trp Pro Tyr Val					
565		570		575	
Val Gly Thr Val Cys Ala Ile Ile Asn Gly Leu Gln Pro Phe Ala Ile					
580		585		590	
Ile Leu Ser Ile Ile Ala Val Phe Asp Asp Val Lys Leu Leu Leu Leu					
595		600		605	
Ala Val Val Pro Ile Ile Val Val Ala Gly Ile Val Glu Met Lys Leu					
610		615		620	
Leu Gly Asn Ala Arg Asp Lys Lys Leu Glu Ala Gly Lys Ile Ala Thr					
625		630		635	640
Glu Ala Ile Glu Asn Ile Arg Thr Val Val Ser Leu Thr Glu Lys Phe					
645		650		655	
Glu Ser Met Tyr Leu Pro Tyr Arg Asn Ser Val Arg Lys Ala His Ile					
660		665		670	
Tyr Gly Ile Thr Phe Ser Ile Ser Gln Ala Met Tyr Phe Ser Tyr Ala					
675		680		685	
Gly Cys Phe Arg Phe Gly Ala Tyr Leu Val His Gly Leu Met Phe Val					
690		695		700	
Ile Leu Val Phe Ser Ala Ile Val Leu Gly Ala Val Ala Leu Gly Thr					
705		710		715	720
Ser Ser Phe Ala Pro Asp Tyr Ala Lys Ala Lys Leu Ser Ala Ala Leu					
725		730		735	
Phe Leu Ile Glu Arg Pro Ile Asp Ser Tyr Ser Glu Gly Leu Pro Asp					
740		745		750	
Leu Glu Gly Val Phe Val Phe Asn Tyr Pro Thr Arg Pro Asp Val Pro					
755		760		765	
Val Leu Gln Gly Leu Ser Leu Glu Val Lys Lys Gly Gln Thr Leu Ala					
770		775		780	
Leu Val Gly Ser Ser Gly Cys Gly Lys Ser Thr Val Val Gln Leu Leu					
785		790		795	800
Glu Arg Phe Tyr Asp Pro Leu Ala Gly Lys Val Leu Leu Asp Gly Lys					
805		810		815	
Ala Ile Lys Lys Leu Asn Val Gln Thr Leu Arg Ala His Leu Gly Ile					
820		825		830	
Val Ser Gln His Trp Ile Leu Phe Arg Tyr Ser Ile Ala His Asn Ile					
835		840		845	
Ala Tyr Gly Asp Asn Ser Arg Val Ser Asp Glu Ile Val Ala Ala Lys					
850		855		860	
Ala Asn Ile His Phe Ile Glu Thr Leu Pro Asp Lys Tyr Thr Arg Val					
865		870		875	880
Gly Asp Lys Gly Thr Gln Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala					
885		890		895	
Val Ser Thr Asp Ala Leu Ile Asn Ile Ile Thr Leu Leu Leu Arg Gln					

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The following table shows the sequence of the DNA fragment, with the sequence of the complementary strand shown in parentheses. The sequence of the complementary strand is shown in parentheses.

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31

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29